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"FREEDOM" AND FEES

It will, perhaps, do no harm to speak a little plainly of some aspects of the inquiry just instituted by the American Political Science Association into "the present situation in American educational institutions as to liberty of thought, freedom of speech, and security of tenure for teachers of political science." . . . The one point in the definition of the field of inquiry made by the association that is open to doubt and to discussion is "the security of tenure for teachers of political science." Here is where the assumptions to which we have referred come in. The gist of the matter is in the question how far a teacher of political science or of any other subject is entitled to retain his place and his pay when his teaching is not satisfactory to the trustees who are responsible for the institution in which he is employed.

That question is in some degree begged by the coupling of security of tenure with freedom of speech, as if the right to the former went with the right to the latter and as if a man not only had an inalienable right to teach whatever he chose, but a right equally inalienable to be paid for teaching it. That theory seems to us to need only to be stated to be rejected. It appears to us too clear to require discussion that the trustees of any institution of education ought not and can not surrender absolutely all control over the teaching in that institution to the men or the women who at any given moment happen to hold places in it. Nor is the matter changed materially if the trustees agree to turn over the control of the teaching to the faculty or to certain members of it. . . . Possibly the committee of the Political Science Association, with due study and reflection, in cooperation with like bodies, may be able to present some general rules or principles that may be useful. In the mean time it does no harm to suggest at the outset that there is no necessary, or even close, connection between the right to freedom of speech and the claim to be paid for speaking out of the funds of an institution the managers of which regard the speaking as mischievous.—*New York Times*.

SCIENTIFIC BOOKS

Lebensgewohnheiten und Instinkte der Insekten bis zum Erwachen der sozialen Instinkte, geschildert von O. M. REUTER. Vom Verfasser revidierte Uebersetzung nach dem schwedischen Manuskript besorgt von A. und M. Buch. R. Friedländer und Sohn, Berlin, 1913. Pp. xvi + 448; 84 text-figures.

This is the first of three volumes which Dr. O. M. Reuter planned to publish on the habits and instincts of insects. It treats only of the solitary species; the other volumes were to be devoted to the Socialia and to a general account of the sense-organs and the comparative psychology of insects. Most regrettably death has intervened to prevent the author from carrying out his plan and we are left with a single volume, which, however, is complete in itself.

The general account of insect behavior with which the work opens follows conventional lines. The activities are regarded as largely "instinctive," though the author is careful to state that some of them may properly be called "intelligent." Owing to the close association of instincts and bodily organization, he speaks of a "morphology of instincts and habits" and throughout the work views them from the evolutionary, or genetic standpoint. They are classified on a teleological basis, however, according to the problems which the insects have to solve in their daily lives. After an introductory chapter on the active and quiescent stages and the length of life of insects, the habits are arranged rather roughly under three heads, according as they subserve the purposes of nutrition, protection or reproduction.

The consideration of food-habits, though comprehensive, presents little that is new, the species being divided into omnivorous (Pantophaga), herbivorous (Phytophaga) and carnivorous (Sarcophaga). The two latter groups are each subdivided into Monophaga and Polyphaga, according as the insects derive their food from a single plant or animal or from several species. Two other groups of insects, the Necrophaga and Coprophaga, which feed on corpses and excrement, respectively, are also recognized. Parasitism is included under

the nutritive instincts, a conception which necessarily leads to a rather narrow and distorted treatment of this multiform phenomenon. The insects that feed on other animals are divided into three groups: typical prædators (*Raptoria*) parasitoid prædators (*Parasitoidea*) and true parasites (*Parasita*). The parasitoids include such forms as the so-called "parasitic" Hymenoptera, namely, the chalcis-flies, ichneumons, etc., which in their larval stage feed on the eggs, larvæ or pupæ of other insects, but as adults do not depart in structure from the non-parasitic members of their order, whereas the *Parasita* live even as adults on the bodies of certain hosts and also in this stage exhibit modifications of structure which adapt them to their peculiar life. At first sight this classification seems to be very satisfactory, but it breaks down on closer examination. If it were adopted one would have to classify the male Strepsiptera as parasitoids and their females as parasites. Moreover, Reuter's conception of parasitism is too narrow, because it includes only food parasitism and excludes phoresy (which Reuter, for some unknown reason, writes "*Foresie*") and brood parasitism. Reuter is, in fact, compelled to expand and modify his conception of parasitism as soon as he comes to consider the parasitic wasps and bees.

Commensalism, and more especially mutualism, are also somewhat too narrowly restricted by their inclusion under the nutritive instincts. Various forms of the migratory instinct are likewise considered under this head, as are also the various methods adopted by insects in protecting themselves from competing consumers. This latter subject forms a transition to the protective instincts proper. It is interesting to note that Reuter treats the toilet instincts ("*Reinlichkeitsinstinkte*") as protectives, since they have a sanitary value, no less than the methods of protecting the organism against excessive cold, heat, moisture, etc. Protection against enemies is distinguished as passive and active, the former comprising the cryptobiotic instincts (in the sense of Willey), protective coloration, mimicry, etc., the wonderfully diverse methods of forming the larval and pupal cases,

autotomy and "death-feigning," while the actively protective behavior includes the use of the repugnatorial glands, the peculiar phenomena of "autohæmorrhœa," or emission of poisonous blood (often charged with cantharidin) from the joints of the legs in various larval and adult beetles, and phosphorescence, although this is in some cases passive (larval fire-flies) or connected with courtship (adult fire-flies). Reuter's treatment of the much-discussed subjects of protective resemblance and mimicry is very conservative. Any consideration of the many doubts which have been cast on these subjects by recent authors, especially in continental Europe, is omitted, as we should expect from the author's assumption that protective colors and devices are essentially passive, instead of being the stable results of once active adaptations.

Reuter devotes to what he calls the "instincts of metamorphosis" a chapter including the peculiar larval activities which leave the pupa in situations best adapted to the eclosion of the adult insect. This chapter clearly shows how impossible it is to draw a hard and fast line between the general physiological and morphological processes, on the one hand, and the instinct activities, on the other.

The reproductive instincts include the phenomena of courtship, that is, the exhibition by one sex of its peculiar movements, colors and structures, photogenesis, the use of the osmateria, or scent-glands, and such extraordinary pieces of behavior as that of the balloon-making male Empidid flies described by Girschner, Mik, Aldrich, Hamm and others, and finally oviposition and the extension of maternal and in rare cases also of paternal care to the eggs and larvæ.

The discussion of these and the foregoing subjects occupies about two thirds of the volume; the remainder is devoted to an excellent summary of the habits of the solitary wasps and solitary bees, and closes with two chapters on the adumbrations of social life noticeable in some non-social insects. The peculiar mixed arrangement of the materials relating to the wasps and bees is evidently intended to call attention to the parallelism or convergence in the phylogeny of their habits.

but it might have been better to have completed the account of each of these groups by itself and to have added a short chapter on the similarities due to convergence.

This very summary description of the contents of Reuter's work unfortunately fails to give any adequate conception of the large amount of very interesting and valuable reading it contains. As the first work to give a comprehensive survey of the habits of the solitary insects it is eminently successful. The writer has collated the essential facts from a very wide perusal of both the older and most recent literature on insect ethology, and has presented the matter in a very succinct and attractive style.

The volume ends with a well-selected bibliography of 60 pages and a good index. The bibliography includes many recent works on the social insects not cited in the text. There are few erroneous statements of fact like the one on p. 365, where it is said that ants appeared "in grossen Massen" in the Jurassic, immediately following the correct statement that "the existence of social Hymenoptera can not be demonstrated till Tertiary times." In the same paragraph we find the erroneous statement that termites occur in the Carboniferous.

The cuts in the text are mostly old, unattractive and poorly printed. Some of them set one to wondering why there are no good figures of many of our common insects, and why our author should be compelled to use, *e. g.*, the time-worn figure on p. 32 of the *Cicindela* larva, which is so small compared with its burrow that it could not possibly use its legs and dorsal horn in the manner described in the text. The number of typographical errors is considerable and many of them have not been corrected in the two pages of errata at the end of the volume. If it be true, however, as the reviewer is informed, that Reuter was blind for several years before his death, all of these errors and the poor selection of figures may be readily explained and pardoned.

W. M. WHEELER

Mind and Health, with an Examination of some Systems of Divine Healing. By ED-

WARD E. WEAVER, with an Introduction by G. STANLEY HALL. New York, The Macmillan Company. 1913. Pp. xv + 500. Price, \$2.00 net.

The occasion for this book is the recent interest of some of the clergy in the practise of psychotherapy. After some account of the history, scientific basis and technique of psychotherapy, and a critical discussion of the merits of Christian Science, divine healing, "new thought," the Emmanuel movement, etc., the author reaches the conclusion that the church and its ministers can rightly and beneficially take a share in treating the sick. Religious faith and fervor, he urges, are a source of vitalizing energy which can be drawn upon for the maintenance and restoration of health. Character and health go together, and the minister of religion is, therefore, charged, to a degree, with the care of health. He should be acquainted with the scientific aspects of psychotherapy and should work in harmony with the physician.

R. S. WOODWORTH

Labrador. By WILFRID T. GRENFELL and others. New edition. New York, The Macmillan Co. 1913. \$2.50 net.

The first edition of this standard work was recognized as a valuable addition to the literature on this practically unknown part of North America. The chapters on history, geology, Indians, birds, insects, mammals, etc., are admirable contributions from recognized experts.

While the new chapters by Dr. Grenfell have no scientific value, yet they are of popular interest, treating of animal life and of conservation. He sets forth pleasantly the lack of daring courage on the part of the bear and wolf, the domestication of the caribou, the food-value of the porcupine, the destructiveness of the lynx and the wiliness of the wolverine. On animal life he tells of the long winter experiences, when the bears sleep, the rabbits eat young birch, and the porcupine keeps to conifers. He adds: "Strangely enough none of the mammals rely on sight for protection. The difficulty of survival is in-